

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

PUBLICATION NUMBER : 11044836  
PUBLICATION DATE : 16-02-99

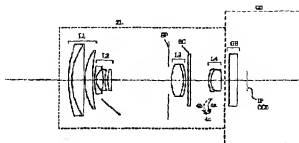
APPLICATION DATE : 24-07-97  
APPLICATION NUMBER : 09214198

APPLICANT : CANON INC;

INVENTOR : HORIUCHI AKINAGA;

INT.CL. : G02B 7/10 G02B 15/16

TITLE : REAR FOCUS TYPE ZOOM LENS  
INCLUDING TRANSMITTED LIGHT  
QUANTITY ADJUSTING MEANS AND  
IMAGE PICKUP DEVICE USING THE  
SAME



ABSTRACT : PROBLEM TO BE SOLVED: To prevent the occurrence of ghost or flare caused by reflected light from the surface of an image pickup element by providing a transmitted light quantity adjusting means consisting of a material element in an optical path where luminous flux is converged or diverged all over the variable power range.

SOLUTION: This zoom lens is constituted of a 1st group L1 having positive refractive power, a 2nd group L2 having negative refractive power, a 3rd group L3 having the positive refractive power and a 4th group L4 having the positive refractive power. An aperture diaphragm SP is arranged in front of the 3rd group L3. In the zoom lens, the transmitted light quantity adjusting means EC consisting of the material element whose light incident surface and light emitting surface are parallel planes such as a liquid crystal element or an electrochromic element is arranged in the optical path between the 3rd group L3 and the 4th group L4 where the luminous flux is converged or diverged all over the variable power range. Thus, reflected light from the surface of the image pickup element is prevented from forming an image on the surface of the image pickup element when it is reflected on the light incident surface or the light emitting surface of the material element and returned to the surface of the image pickup element, so that the occurrence of the flare or the ghost is prevented.

COPYRIGHT: (C)1999,JPO